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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,605	04/06/2001	Jie Tang	17564-145	2181

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MINTZ, LEVIN, COHN, FERRIS, GLOVSKY  
AND POPEO, P.C.  
ONE FINANCIAL CENTER  
BOSTON, MA 02111

EXAMINER

WYSZOMIERSKI, GEORGE P

ART UNIT	PAPER NUMBER
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1742

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DATE MAILED: 09/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/827,605	GOEHRING ET AL.	
	Examiner	Art Unit	
	George P Wyszomierski	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 4/6/01 (Reissue Application).
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner. *See page 2.*

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

1. The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following: The declaration does not indicate any residence, mailing address, or country of citizenship for inventors Hess or Goehring as required by 35 USC 115 and 37 CFR 1.63(a)(3).

2. Claims 1-31 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defects in the declaration is set forth in the discussion above in this Office action.

3. According to PTO records, an interest in the patent which is the subject of the present reissue application was assigned to Alpha Metals (Korea) LTC, by assignment dated July 30, 2001. However, no consent or statement under 37 CFR 3.73(b) from this assignee is of record in the application. Clarification is required.

4. The specification as filed is objected to because Applicant is required to provide a copy of the specification in double column format, including any changes made by Certificate of Correction (without brackets or underlining). See MPEP section 1410 and 37 CFR 1.173(a)(1).

5. Claims 15 and 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) In claim 15, line 2, the word "electrical" should be changed to --electric--. Also, in line 3 of this claim, "the descending spheres" lacks proper antecedent basis.

b) In line 3 of each of claims 29 and 30, "the charged liquid spheres" lacks proper antecedent basis.

c) In claim 3, line 10, "the liquid spheres" lacks proper antecedent basis.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 6-14, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (U.S. Patent 4,419,303).

Anderson discloses a process which includes providing a melt of liquid sodium, applying vibrations thereto (see Anderson column 6, line 9), and using a pressure differential to force the liquid through an orifice into a medium maintained at well below 0°C (see Anderson column 8, lines 36-55). The liquid then solidifies, preferably into substantially uniformly sized spheres (see Anderson column 6, lines 46-56). Therefore, Anderson discloses a process substantially in accord with that of instant claims 1 or 31.

With respect to instant claim 2, the cooling environment of Anderson is preferably cooled helium gas which, being much cooler than the liquid material, would inherently (by the basic laws of thermodynamics) absorb at least some heat of fusion from the formed spheres. With respect to instant claim 6, the examples of Anderson provide numerical details as to the size and shape of the spheres produced in the prior art; the examiner therefore concludes that some

visual examination was performed in the prior art in order to obtain this information. With respect to instant claim 7, the bottom portion of the apparatus used by Anderson (49) appears to be funnel shaped. With respect to instant claim 8, Anderson column 7, line 50 indicates a preferable diameter within the presently claimed range. With respect to instant claim 10, the Anderson process employs a quartz rod to produce the vibrations, which would clearly meet the limitations of claim 10. With respect to instant claims 11 and 12, while the prior art does not refer to a "stack" or an "electromechanical transducer" as presently claimed, these limitations as recited essentially define apparatus limitations on the claimed process, and as such do not define a process patentably distinct from that of the prior art. With respect to instant claims 13 and 14, the size of the orifice and the pressure employed in, e.g. Anderson Example 1 appear to be substantially constant.

Anderson does not specify the presence of a "heat gradient" as required by instant claims 1 or 31, and does not specify the time limitations of instant claim 9. These differences are not seen as resulting in a patentable distinction between the prior art and the claimed invention because:

a) With regard to a heat gradient, the cooled helium used in the Anderson process is kept at a temperature far below ambient. Therefore, the temperature of the helium would vary, with the temperature at a point located near to the source of cooling (liquid nitrogen in the case of Anderson) being the coolest and the temperature located far from the cooling source being relatively higher. The assumption is thus that a heat gradient is present in the process as disclosed by Anderson.

b) With regard to residence time, this would be largely determined by the force of gravity and the amount of turbulence present in the reactor. Because these factors may be the same in

Art Unit: 1742

either the prior art or the claimed invention, the time limitations as presently claimed are held to be within the purview of what is disclosed by Anderson.

Consequently, a prima facie case of obviousness is established between the disclosure of Anderson and the process as presently claimed.

8. It is noted that the original ribboned copy of the patent that is the subject of this reissue application has not been surrendered. Either the original patent, or a statement addressing the loss or inaccessibility of the original patent must be received before this reissue application can be allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (703) 308-2531. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (703) 308-1146. The fax phone number for this Group is (703) 872-9310. The Right fax number for this examiner is (703) 872-9039. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER

GPW  
September 5, 2002